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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,850	02/11/2002	Jun Li	10015452	6650

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HEWLETT-PACKARD COMPANY
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EXAMINER

RUTTEN, JAMES D

ART UNIT PAPER NUMBER

2192

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/073,850

Applicant(s)

LI ET AL.

Examiner

J. Derek Rutten

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/11/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-25 have been examined.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. Since the method steps recited in the claims do not invoke the use of any tangible device or results, the claims cannot be considered statutory. For the purpose of further examination, these claims will be interpreted as being a "computer implemented method for displaying computer system runtime information on a display device".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 22 recites: "said unique identifier is used by said at least one display device to query said analyzer for further runtime information". Page 57, paragraph [0187] of the specification provides support for a display device that includes hardware support, and necessary user-interface related software support. However, this does not provide information related to a device that includes software support to query an analyzer for such non-user-interface related information, such as runtime information. Further search of the specification did not reveal detailed information regarding a display device that queries an analyzer for runtime information. Interpretation has been made as --said unique identifier is used to query said analyzer for further runtime information--.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 3 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 3 recites "wherein said first hyperbolic tree further displays causal relationship runtime information in a non-tree graph." A hyperbolic tree is an abstract representation of data that by definition displays information in a tree graph. It is not clear how such a tree can display information in a non-tree graph. If information is displayed in a non-tree graph, then it cannot be

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called a tree. For the purpose of further examination, this limitation will be interpreted as -- wherein causal relationship runtime information is displayed in a non-tree graph--.

9. Claim 12 is rejected for the same reasons as presented in the rejection of claim 3 above.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-3, 5-8, 10-14, 18, 19, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by “Java Hyperbolic Browser in action” by Vladimir Bulatov (hereinafter “Bulatov”).

In regard to claim 1, Bulatov discloses:

A computer implemented method for displaying computer system runtime information, on a display device Bulatov discloses a method of using a hyperbolic profiler browser that displays runtime information.

comprising the steps of:

displaying a plurality of runtime information items in a first hyperbolic tree as a plurality of nodes; See paragraph 6:

All tree is represented by 3 levels of nodes: packages (blue cycles), classes (green cycles), methods(pink cycles). All nodes are sorted by time and are placed clockwise starting from noon.

showing one or more links between nodes in said first hyperbolic tree, with said one or more links representing node causal relationships; and See paragraph 5:

The Hyperbolic Browser represents all methods, classes and packages as a tree. However to make possible to fit big amount of methods and classes (hundreds and thousands in relatively big program), it uses Poincare-disk model of hyperbolic plane.

According to the online encyclopedia wikipedia.org: "...a tree is a widely-used computer data structure that emulates a tree structure with a set of linked nodes..." This is the type of tree used by Bulatov. For further description of causal relationships see paragraph 8:

Clicking by mouse over a method's cycle [sic] causes drawing of bounds, which connect this method with its callers

moving a particular tree node of said first hyperbolic tree to a center node position in said first hyperbolic tree if a user input selects said particular tree node. See paragraph 7:

Dragging node by mouse to center of Poincare disk caused considerable zooming in of visible size of this cycle [sic] with corresponding zooming out of nodes, which are going to boundary of disk.

In regard to claim 2, the above rejection of claim 1 is incorporated. Bulatov further discloses: *wherein the displaying step dynamically generates said first hyperbolic tree. See paragraph 4. The tree is dynamically generated upon selection of the "Show Graph" menu item.*

In regard to claim 3, the above rejection of claim 1 is incorporated. Bulatov further discloses: *wherein causal relationship runtime information is displayed in a non-tree graph. See paragraph 3.*

In regard to claim 5, the above rejection of claim 1 is incorporated. Bulatov further discloses: *generating a linking graph that links said first hyperbolic tree and a*

second hyperbolic tree. See paragraph 8 for a description of the generation and display of a second tree that is linked to the original tree.

In regard to claim 6, the above rejection of claim 1 is incorporated.. Bulatov further discloses: *generating a linking graph that links said first hyperbolic tree and a second hyperbolic tree if a user input is a navigation input that selects said second hyperbolic tree.* See paragraph 8 as cited in the above rejection of claim 5.

In regard to claim 7, the above rejection of claim 5 is incorporated. Bulatov further discloses: *wherein the generating step generates a linking graph that connects a current node of said first hyperbolic tree to a corresponding node in said second hyperbolic tree.* See paragraph 8 as cited in the above rejection of claim 5.

In regard to claim 8, the above rejection of claim 5 is incorporated. Bulatov further discloses: *dynamically generating said linking graph.* See paragraph 8 as cited above in the rejection of claim 5.

In regard to claim 10, all limitations have been addressed in the above rejections of claims 1 and 6.

In regard to claims 11-13, the above rejection of claim 10 is incorporated. All further limitations have been addressed in the above rejections of claims 2-4, respectively.

In regard to claim 14, Bulatov discloses:

A visualization system adapted for displaying runtime information from a computer system, Bulatov discloses using a browser to visualize runtime information in paragraph 1. Browsers inherently require a computer system to operate.

comprising:

a repository for storing a plurality of runtime information items from said computer system; See paragraph 1:

It differs from real application only by the fact, that it takes name of profile as an applet parameter. **This file should be located at applet's host**, because applet unable to load file from your computer directory hard drive.

a display device capable of displaying one or more runtime information items of said plurality of runtime information items; and See paragraph 3:

After applet will be loaded (about 100K of *.class files make take a while...) there will appear main HyperProf window with 4 lists of profile info. You may **click** or sometimes **double click on items** in lists to get list of corresponding callers and callee for each method.

Note that a display device is inherently required since Bulatov refers to windows, and clicking on items which need a display device to function properly.

an analyzer for retrieving said one or more runtime information items from said plurality of runtime information items, processing said one or more runtime information items, and generating a display of said one or more runtime information items on said display device; See paragraph 5 as cited in the above rejection of claim 1:

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The Hyperbolic Browser represents all methods, classes and packages as a tree. However to make possible to fit big amount of methods and classes (hundreds and thousands in relatively big program), it uses Poincare-disk model of hyperbolic plane.

The browser uses profile information to generate a hyperbolic tree. Therefore, an analyzer is inherent, otherwise the relationship of data would be impossible to represent.

wherein said display device displays said runtime information as at least two hyperbolic trees. See paragraph 8:

Clicking by mouse over a method's cycle causes drawing of bounds, which connect this method with its callers (yellow hyperlines) and callees (white hyperlines).

Thus, at least two hyperbolic trees are displayed using yellow hyperlines for the first, and white hyperlines for the second.

In regard to claim 18, the above rejection of claim 14 is incorporated. Bulatov further discloses: *wherein a hyperbolic tree of said at least two hyperbolic trees comprises a dynamic call graph hyperbolic tree. See paragraph 4.*

In regard to claim 19, the above rejection of claim 14 is incorporated. Bulatov further discloses: *wherein said at least two hyperbolic trees represent different aspects of a system characterization. See paragraph 8.*

In regard to claim 25, the above rejection of claim 14 is incorporated. Bulatov further discloses: *wherein said display device is capable of being launched and operated inside a web browser and wherein said display device interacts directly with said analyzer or through a web server. See paragraph 1.*

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 4, 9, 15, 16, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bulatov as applied to claim 1 above, and further in view of prior art of record U.S. Patent 6,026, 362 to Kim et al. (hereinafter "Kim").

In regard to claim 4, Bulatov does not expressly disclose: *wherein a user input to a displayed hyperbolic tree is capable of expanding or contracting said displayed hyperbolic tree*. However, in an analogous environment, Kim teaches that a node in a tree can be expanded and contracted. See column 11 lines 50-53. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Kim's expanding and contracting nodes with Bulatov's hyperbolic trees. One of ordinary skill would have been motivated to concentrate his or her efforts in a particular area of the program (Kim column 11 lines 48-50).

In regard to claim 9, the above rejection of claim 5 is incorporated. Bulatov further discloses *moving into focus a selected node...* See paragraph 7 as cited in the rejection of claim 1 above. Bulatov further discloses *a second hyperbolic tree*. See

paragraph 8 as cited above in the rejection of claim 5. Bulatov does not expressly disclose *wherein said selected node was in a contracted subtree*. However, in an analogous environment, Kim teaches that a node can be selected for focus from a contracted subtree. See column 11 lines 50-53. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Kim's expanding and contracting nodes with Bulatov's hyperbolic trees. One of ordinary skill would have been motivated to concentrate his or her efforts in a particular area of the program (Kim column 11 lines 48-50).

In regard to claim 15, the above rejection of claim 14 is incorporated. Bulatov does not expressly disclose *wherein said display device communicates with said analyzer over a second communication link*. However, in an analogous environment, Kim teaches that a display device can communicate with a debug analyzer via a bus or I/O channel. See column 7 lines 18-25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Kim's I/O channel with Bulatov's display. One of ordinary skill would have been motivated to connect a display to a debug analyzer in order to provide meaningful data to the display.

In regard to claim 16, the above rejection of claim 14 is incorporated. Bulatov does not expressly disclose *wherein said repository communicates with said analyzer over a first communication link*. However, in an analogous environment, Kim teaches that a repository can communicate with a debug analyzer via a bus or I/O channel. See

column 7 lines 18-25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Kim's I/O channel with Bulatov's repository. One of ordinary skill would have been motivated to connect a repository to a debug analyzer in order to provide data to the analyzer.

In regard to claim 23, the above rejection of claim 14 is incorporated. All further limitations have been addressed in the above rejection of claim 9.

14. Claims 17 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bulatov as applied to claim 14 above, and further in view of U.S. Patent 6,654,759 to Brunet et al. (hereinafter "Brunet").

In regard to claim 17, the above rejection of claim 14 is incorporated. Bulatov further discloses that a hyperbolic browser can be used to visualize hierarchical data in general. See paragraph 11. Bulatov does not expressly disclose *wherein said at least two hyperbolic trees comprises an interface repository hyperbolic tree*. However, in an analogous environment, Brunet teaches that an application programming interface (API) can be represented as a hierarchical tree. See column 12 lines 18-20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Brunet's API tree with Bulatov's hyperbolic browser. One of ordinary skill would have been motivated to allow generic access to an object in a tree (Brunet column 4 lines 24-

26).

In regard to claim 20, the above rejection of claim 14 is incorporated. Bulatov discloses cross-linking tree nodes in a hyperbolic tree. See paragraph 8 as cited in the above rejection of claim 5. Bulatov does not expressly disclose *wherein said analyzer assigns a unique identifier for each displayed hyperbolic tree node, and wherein said unique identifier is used for cross-linking between tree nodes in a hyperbolic tree.*

However, Brunet teaches uniquely identifying nodes in a tree and cross-linking a subtree using unique identifiers. See column 7 lines 30-32 and 46-48. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Brunet's unique identifiers with Bulatov's nodes. One of ordinary skill would have been motivated to assign a unique identifier to a node in order to distinguish it from other nodes.

In regard to claim 21, the above rejection of claim 14 is incorporated. Bulatov discloses cross-linking a first and a second tree node. See paragraph 8 as cited in the above rejection of claim 5. All further limitations have been addressed in the above rejection of claim 20.

In regard to claim 22, the above rejection of claim 14 is incorporated. Bulatov discloses *query said analyzer for further runtime information items for a current*

hyperbolic tree node. See paragraph 8. All further limitations have been addressed in the above rejection of claim 20.

15. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bulatov as applied to claim 14 above, and further in view of Kim, and further in view of “The Hyperprof – hyperbolic profile browser for Java” by Bulatov (hereinafter “README file”).

In regard to claim 24, the above rejection of claim 14 is incorporated. Bulatov discloses inspection of node information, path information. See paragraphs 3 and 9. Also, the “README file” is referenced in paragraph 3. Specifically, see page 3 of the README file in the second paragraph for further information regarding subgraph information. Bulatov does not expressly disclose *wherein a tree-specific, node-oriented menu is provided for the user to inspect... information*. However, Kim teaches a tree specific node oriented menu for inspecting information related to a node of a tree. See column 16 lines 38-51. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Kim’s menu with Bulatov’s tree nodes. One of ordinary skill would have been motivated to permit greater customization of displayed information.

Conclusion

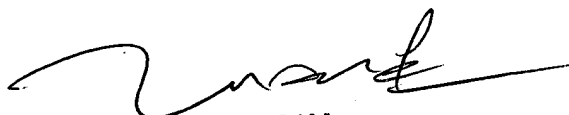
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Derek Rutten whose telephone number is (571) 272-3703. The examiner can normally be reached on T-F 6:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jdr



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SUPERVISORY PATENT EXAMINER